

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LARRY S. CORLEY

Appeal No. 93-4332
Application 07/707,717¹

ON BRIEF

Before JOHN D. SMITH, PAK and McFARLANE, Administrative Patent Judges.

McFARLANE, Administrative Patent Judge.

¹ Application for patent filed May 30, 1991. According to appellant, this application is a continuation-in-part of Application 07/545,745 filed June 29, 1990, now U.S. Patent No. 5,086,139 granted February 4, 1992.

DECISION ON APPEAL

This is an appeal from the rejection of claims 1 through 15.² Claims 16 through 22 stand withdrawn from consideration. See Paper No. 4.

Appellant's claimed invention relates to a process for improving the solubility of a curable bisimide/triene mixture in an organic solvent. According to the claimed invention, a mixture of a bisimide of an unsaturated dicarboxylic acid and a triene is provided. The mixture is subjected to a non-gelling elevated temperature for a time sufficient to increase the viscosity of the mixture and to enhance the solubility of the mixture in an organic solvent. According to the specification, a curable bisimide solution is provided which comprises a partially-cured bisimide and a reactive triene which is capable of unhindered Diels-Alder reaction with the bisimide and an isolated double bond (specification, page 2, lines 14-17). Still, according to the specification, triene as a modifier of

² We note Appellant's statement (brief, page 1) that the appeal is from the final rejection of October 28, 1992 (Paper No. 8). As Applicant seems to appreciate, the final rejection was withdrawn in favor of a non-final rejection mailed January 25, 1993 (Paper No. 10). From the record, it is clear that this appeal is from the non-final rejection and not the withdrawn final rejection. Of course, the appeal from a non-final rejection is proper since the claims have been twice rejected, 37 CFR § 1.191(a).

Appeal No. 93-4332
Application 07/707,717

bisimides, provides bisimide resin compositions with good physical properties and enhanced processability for electrical laminating applications (specification, page 1, line 24 to page 2, line 12).

To describe the invention in greater detail, a copy of the claims as taken from the appeal brief is attached as an appendix to this decision.

The reference relied upon by the examiner is:

Corley	5,086,139	Feb. 4, 1992
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Claims 1-15 stand rejected³ under 35 U.S.C. § 101 as claiming the same invention as that of claims 21-25 of Corley. Claims 1-15 also stand rejected under 35 U.S.C. § 112 first and second paragraphs as the claimed invention is not described in such full, clear, concise and exact terms as to enable any person skilled in the art to make and use the same, and/or for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. For reasons developed below, we reverse each of the above-noted rejections.

³ We note appellant's statement (brief, page 4) that "claims 1-15 are rejected under 35 U.S.C. § 101 as claiming the same invention as that of claims 1-25 of prior U.S. Patent No. 5,086,139." This statement is incorrect. The correct statement of the rejection is noted at page 2 of the examiner's answer filed August 6, 1993 (paper no. 15).

Appeal No. 93-4332
Application 07/707,717

OPINION

The Double Patenting Rejection
Under 35 U.S.C. § 101

It is the examiner's position that claim 21 of the Corley patent recites

"heating" the monomer blend to a temperature of "about 170° to about 350°C["] which includes a range of "about 170° to about 200°C." [Answer, page 3.]

In comparing patent claim 21 to application claim 1, the examiner contends that the "heating" step (i.e., step (b)) of the patent claim is the same as step (2) of the application claim. The examiner subsequently concludes that

[s]ince all claimed process parameters of the application are the same as the patented parameters of the patent, the claimed process is the same as the patented process. Id.

We cannot agree with the examiner's conclusion that appellant is claiming the same subject matter as that of patented claims 21 through 25. It is well settled that the same invention cannot be claimed twice. 35 U.S.C. § 101 forbids two patents from being issued on the same invention. See, e.g., In re Boylan, 392 F.2d 1017, 1021, 157 USPQ 370, 374 (CCPA 1968). As the court stated in In re Vogel, 422 F.2d 438, 441, 164 USPQ 619, 622 (CCPA 1970):

Appeal No. 93-4332
Application 07/707,717

A good test, and probably the only objective test, for, "same invention," is whether one of the claims could be literally infringed without literally infringing the other. If it could be, the claims do not define identically the same invention.

In determining whether one claim could be literally infringed without literally infringing the other, we must determine the scope of the claims involved. To determine the scope of the claims, the meaning of words in the claims may be interpreted in light of the specification. During prosecution of a patent application, the words in claims must be given their broadest reasonable interpretation consistent with the specification. In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

Application claim 1 calls for providing a monomer mixture comprising a bisimide and triene and "subjecting said monomer mixture to a non-gelling elevated temperature for a time sufficient to increase the viscosity of the mixture and to enhance the solubility thereof in an organic solvent." According to the specification, the phrase, "non-gelling elevated temperature" is a temperature at which the composition will not gel (specification, page 7, lines 1-4). The specification at page 6, lines 26-30, also states that the temperature to which the mixture may be heated is "at least about 130°C., preferably within the range of about 150°C to about 200°C., held for a time

of about 2 hours or more." We also note that at such temperatures, the bisimide copolymer product will not be fully cured. See the specification at page 2, lines 14-17 and page 8, lines 17-19. We therefore construe the language, "non-gelling elevated temperature" to mean a temperature ranging between at least about 130°C to about 200°C and wherein the product derived from such heating step is a partially-cured bisimide/triene copolymer.

In comparing patent claim 21 with application claim 1, we note that patent claim 21 is directed to a method for preparing a fully cured bisimide whereas application claim 1 is limited to the preparation of a partially cured bisimide. Furthermore, we note that the subject matter of patent claim 21 is narrower in scope than the subject matter of application claim 1. For example, step (a) of patent claim 21 calls for a C₆₋₂₀ triene which is represented by one of formulas I and II whereas application claim 1 places no restriction on the triene. We also note that with respect to step (b) of patent claim 21, a heating temperature range of "about 170° to about 350°C" is recited whereas application claim 1 is limited to a temperature range of 130 to 200°C. It is apparent that with respect to the temperature ranges, patent claim 21 and application claim 1

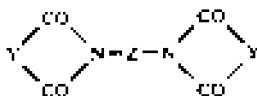
Appeal No. 93-4332
Application 07/707,717

contain overlapping subject matter. Clearly then, the subject matter of patent claim 21 cannot be said to be the same as the subject matter defined by application claim 1. It is apparent therefore that patent claim 21 and the claims dependent therefrom can be infringed without infringing any of application claims 1 through 15.

We conclude therefore that under 35 U.S.C. § 101, the subject matter defined by patent claims 21 through 25 is not the same as the subject matter defined by application claims 1 through 15. Accordingly, we reverse the decision of the examiner to reject the claims under 35 U.S.C. § 101 as claiming the same invention as claims 21 through 25 of US patent No. 5,086,139.

The Rejection Under 35 U.S.C. § 112

Concerning the indefiniteness of the claims, the examiner contends that "either the bisimide is represented by the claimed formula or the bisimide is not represented by the claimed formula" (emphasis in the original; answer, page 4). It is well settled that the examiner has the initial burden to prove that the claims are indefinite. The examiner has attempted to improperly shift that burden to appellant. That, the examiner cannot do. The examiner has failed to provide any evidence that bisimides other than "a bisimide of an unsaturated dicarboxylic acid" are characterized by formula



in which Y is a substituted or unsubstituted divalent group containing at least 2 carbon atoms and a carbon-carbon double bond, and Z is a divalent linking group. Indeed, our review of the record indicates that "a bisimide of an unsaturated dicarboxylic acid" is one and the same as a bisimide having the above noted formula. We conclude that the language, "which ... can be," in connection with the above noted formula, is reasonably precise and is thus not vague, indefinite or unclear. Accordingly, the rejection under 35 U.S.C. § 112, second paragraph is reversed.

Regarding the rejection based on enablement, the examiner has presented no reasons why he considers the specification to be nonenabling. That is, the examiner has provided no explanation as to why a person of ordinary skill in the art would not have been able to make or use the claimed invention without undue experimentation. The examiner does not satisfy his initial burden of establishing a prima facie case of non-enablement simply by expressing doubt that the specification is not enabling for the type of bisimide used in the claimed process. It is the

Appeal No. 93-4332
Application 07/707,717

examiner's burden at the outset to establish with objective evidence or scientific reasoning a legitimate concern that the bisimides within the scope of the appealed claims is not enabled by the specification and that undue experimentation would be required to practice the invention. See In re Strahilevitz, 668 F.2d 1229, 1232, 212 USPQ 561, 563 (CCPA 1982); In re Armbruster, 512 F.2d 676, 677-78, 185 USPQ 152, 153 (CCPA 1975); In re Marzocchi, 439 F.2d 220, 223, 169 USPQ 367, 369 (CCPA 1971). Here, the examiner has presented no such evidence. Accordingly, to the extent that the claims have been rejected based on a lack of enablement of the specification, such rejection is reversed.

CONCLUSION

The decision of the examiner is reversed.

REVERSED

JOHN D. SMITH)	
Administrative Patent Judge)	
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CHUNG K. PAK)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS
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ANTHONY McFARLANE)	
Administrative Patent Judge)	
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Appeal No. 93-4332
Application 07/707,717

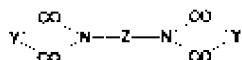
Appeal No. 93-4332
Application 07/707,717

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APPENDIX

1. A process comprising:

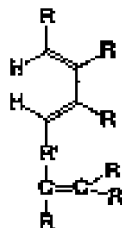
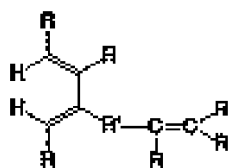
(1) providing a monomer mixture comprising (a) a bisimide of an unsaturated dicarboxylic acid, which bisimide can be represented by the formula



in which Y is a substituted or unsubstituted divalent group containing at least 2 carbon atoms and a carbon-carbon double bond, and Z is a divalent linking group, and (b) a triene which contains both a conjugated diene moiety capable of unhindered Diels-Alder reaction with a Y group of the bisimide and a carbon-carbon double bond separated from the conjugated pair by a divalent linking group; and

(2) subjecting said monomer mixture to a non-gelling elevated temperature for a time sufficient to increase the viscosity of the mixture and to enhance the solubility thereof in an organic solvent.

2. The process of claim 1 in which the triene is represented by one of formulas I and II



in which each R is selected independently from the group consisting of hydrogen and C₁₋₃ alkyl, R' is a divalent linking group, and the double bond separated from the conjugated pair adjoins at least one hydrogen-bearing carbon atom.

3. The process of claim 2 in which R' is C₂₋₁₂ alkylene.
4. The process of claim 3 in which each R is selected from the group consisting of hydrogen and methyl.
5. The process of claim 2 in which R' is -O-R''-O-, in which R'' is selected from the group consisting of C₂₋₁₂ alkylene and phenylene.
6. The process of claim 1 in which the triene is myrcene.
7. The process of claim 1 in which the molar ratio of the triene to the bisimide is within the range of about 0.2-1.0:1.
8. The process of claim 7 in which the triene is myrcene.
9. The process of claim 8 in which the bisimide comprises N, N-4,4'-diphenylmethane bismaleimide.
10. The process of claim 1 which further comprises from about 0.0002 to about 0.2 moles, per mole of the bisimide, of a free radical polymerization inhibitor.
11. The process of claim 10 in which the free radical polymerization inhibitor is phenothiazine.
12. The process of claim 9 in which the molar ratio of the myrcene to the bisimide is within the range of about 0.4-0.8:1.
13. The process of claim 1 in which the elevated temperature of step (b) is within the range of about 130 to about 200°C.
14. The process of claim 9 in which step (b) is carried out for a time sufficient to produce a thermosettable, partially-cured mixture having a viscosity within the range of about 0.5 to about 10 Pa.s.

Appeal No. 93-4332
Application 07/707,717

15. The process of claim 9 in which step (b) comprises heating the mixture at a temperature within the range of about 130 to about 200°C for a time of 2 to about 20 hours.